

What is claimed is:

1. A multi-domain liquid crystal display device comprising:
first and second substrates opposing each other between a
liquid crystal layer;
a plurality of gate lines and data lines on the first
substrate lengthwise and crosswise, to define a pixel region;
a common auxiliary electrode on a layer equal to the gate
lines to surround the pixel region;
a gate insulating film on the first substrate;
a passivation film on the gate insulating film including the
first substrate;
a pixel electrode in the pixel region;
a light-shielding layer on the second substrate;
a color filter layer on the light-shielding layer;
a common electrode on the color filter layer;
a plurality of electric field distortion dielectric
structures patterned in different forms within neighboring
pixels; and
an alignment film on at least one of the first and second
substrates.

2. The multi-domain liquid crystal display device as claimed
in claim 1, wherein the pixel electrode overlaps the common
auxiliary electrode.

Sub D1
3. The multi-domain liquid crystal display device as claimed in claim 2, wherein the light-shielding layer overlaps the common auxiliary electrode.

Sub D2
4. The multi-domain liquid crystal display device as claimed in claim 1, wherein the pixel electrode does not overlap the common auxiliary electrode.

Sub D3
5. The multi-domain liquid crystal display device as claimed in claim 4, wherein the light-shielding layer overlaps the pixel electrode.

Sub D4
6. The multi-domain liquid crystal display device as claimed in claim 4, wherein the gate insulating film and the passivation film are formed in a region except the common auxiliary electrode.

Sub D5
7. The multi-domain liquid crystal display device as claimed in claim 1, wherein the common auxiliary electrode is electrically connected with the common electrode.

Sub D6
8. The multi-domain liquid crystal display device as claimed in claim 1, further comprising an L-shaped thin film transistor formed in a crossing point of the gate lines and the data lines.

Sub E1

9. The multi-domain liquid crystal display device as claimed in claim 1, wherein the electric field dielectric structures are formed on the pixel electrode.

5 10. The multi-domain liquid crystal display device as claimed in claim 1, wherein the electric field dielectric structures are formed on the common electrode.

11. The multi-domain liquid crystal display device as claimed in claim 1, wherein the electric field dielectric structures are formed on the color filter layer.

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12. The multi-domain liquid crystal display device as claimed in claim 1, wherein the pixel electrode has an electric field induction window therein.

13. The multi-domain liquid crystal display device as claimed in claim 1, wherein the passivation film has an electric field induction window therein.

14. The multi-domain liquid crystal display device as claimed in claim 1, wherein the gate insulating film has an electric field induction window therein.

20 15. The multi-domain liquid crystal display device as

claimed in claim 1, wherein the common electrode has an electric field induction window therein.

16. The multi-domain liquid crystal display device as claimed in claim 1, wherein the color filter layer has an 5 electric field induction window thereon.

17. The multi-domain liquid crystal display device as claimed in claim 1, further comprising an over coat layer on the color filter layer.

sub 53 18. The multi-domain liquid crystal display ~~device~~ as claimed in claim 17, wherein the over coat layer has an electric field induction window therein.

19. The multi-domain liquid crystal display device as claimed in claim 1, wherein the passivation film comprises a material selected from one group consisting of BCB, acrylic resin 15 and polyimide.

20. The multi-domain liquid crystal display device as claimed in claim 1, wherein the passivation film comprises a material selected from one group consisting of SiN_x , and SiO_x .

21. The multi-domain liquid crystal display device as

claimed in claim 1, wherein the common auxiliary electrode comprises a material selected from one group consisting of ITO, Al, Mo, Cr, Ta, Ti and Al alloy.

22. The multi-domain liquid crystal display device as claimed in claim 1, wherein the pixel electrode comprises a material selected from one group consisting of ITO, Al and Cr.

23. The multi-domain liquid crystal display device as claimed in claim 1, wherein the common electrode comprises ITO.

24. The multi-domain liquid crystal display device as claimed in claim 1, wherein the dielectric structure has a dielectric constant smaller than that of the liquid crystal layer.

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25. The multi-domain liquid crystal display device as
claimed in claim 1, wherein the dielectric structure comprises
15 a photosensitive material.

26. The multi-domain liquid crystal display device as claimed in claim 1, wherein the dielectric structure comprises a material selected from one group consisting of photoacrylate and BCB.

E1
Cont'd
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27. The multi-domain liquid crystal display device as claimed in claim 1, wherein the pixel region is divided into at least two regions so that liquid crystal molecules of the liquid crystal layer have different driving characteristics on each region.

28. The multi-domain liquid crystal display device as claimed in claim 1, wherein the alignment film is divided into at least two regions so that liquid crystal molecules of the liquid crystal layer have different alignment characteristics on each region.

29. The multi-domain liquid crystal display device as claimed in claim 28, wherein at least one region of the alignment film is aligned.

30. The multi-domain liquid crystal display device as
15 claimed in claim 28, wherein the regions of the alignment film are not aligned.

31. The multi-domain liquid crystal display device as claimed in claim 1, wherein the liquid crystal constituting the liquid crystal layer has a positive dielectric anisotropy or a
20 negative dielectric anisotropy.

E1
Cont'd

32. The multi-domain liquid crystal display device as claimed in claim 1, further comprising a negative uniaxial film on at least one of the first substrate and the second substrate.

5 33. The multi-domain liquid crystal display device as claimed in claim 1, further comprising a negative biaxial film on at least one of the first substrate and the second substrate.

34. The multi-domain liquid crystal display device as claimed in claim 1, wherein the liquid crystal layer includes a chiral dopant.

50 35. A multi-domain liquid crystal display device comprising:
a data line to apply a data signal;
a pixel electrode for driving a liquid crystal;
a gate line crossed to the data line, to define a pixel region;
15 a common auxiliary electrode formed to surround the pixel region; and
a plurality of electric field distortion dielectric structures formed in different forms within neighboring pixels.

20 36. The multi-domain liquid crystal display device as claimed in claim 35, wherein the common auxiliary electrode is formed on a layer same as the gate line.

~~not yet~~ 37. The multi-domain liquid crystal display device as claimed in claim 35, wherein the pixel electrode has an electric field induction window therein.